



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2014-0235; Directorate Identifier 2013-NM-249-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain The Boeing Company Model DC-8-55, DC-8F-54, and DC-8F-55 airplanes, Model DC-8-60 series airplanes, Model DC-8-60F series airplanes, Model DC-8-70 series airplanes, and Model DC-8-70F series airplanes. This proposed AD was prompted by multiple reports of cracking of the upper aft skin panel of the fuselage. An evaluation by the design approval holder (DAH) indicates that the upper aft skin panel of the fuselage is subject to widespread fatigue damage (WFD). This proposed AD would require removing any previously installed local repairs; installing a full-length improvement modification with finger doublers or a full-length repair with finger doublers; and repetitive inspections for cracking of the doublers, and repair if necessary. We are proposing this AD to detect and correct fatigue cracking of the upper aft skin panel of the fuselage, which could result in loss of structural integrity and consequent rapid decompression of the airplane.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, 3855 Lakewood Boulevard, MC D800-0019, Long Beach, CA 90846-0001; telephone 206-544-5000, extension 2; fax 206-766-5683; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0235; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Chandraduth Ramdoss, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Blvd, Suite 100, Lakewood, CA 90712-4137, phone: 562-627-5239; fax: 562-627-5210; email: chandraduth.ramdoss@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2014-0235; Directorate Identifier 2013-NM-249-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

Structural fatigue damage is progressive. It begins as minute cracks, and those cracks grow under the action of repeated stresses. This can happen because of normal operational conditions and design attributes, or because of isolated situations or incidents such as material defects, poor fabrication quality, or corrosion pits, dings, or scratches. Fatigue damage can occur locally, in small areas or structural design details, or globally. Global fatigue damage is general degradation of large areas of structure with similar structural details and stress levels. Multiple-site damage is global damage that occurs in a large structural element such as a single rivet line of a lap splice joining two large skin panels. Global damage can also occur in multiple elements such as adjacent frames or stringers. Multiple-site-damage and multiple-element-damage cracks are typically too small initially to be reliably detected with normal inspection methods. Without intervention, these cracks will grow, and eventually compromise the structural integrity

of the airplane, in a condition known as WFD. As an airplane ages, WFD will likely occur, and will certainly occur if the airplane is operated long enough without any intervention.

The FAA's WFD final rule (75 FR 69746, November 15, 2010) became effective on January 14, 2011. The WFD rule requires certain actions to prevent catastrophic failure due to WFD throughout the operational life of certain existing transport category airplanes and all of these airplanes that will be certificated in the future. For existing and future airplanes subject to the WFD rule, the rule requires that DAHs establish a limit of validity (LOV) of the engineering data that support the structural maintenance program. Operators affected by the WFD rule may not fly an airplane beyond its LOV, unless an extended LOV is approved.

The WFD rule (75 FR 69746, November 15, 2010) does not require identifying and developing maintenance actions if the DAHs can show that such actions are not necessary to prevent WFD before the airplane reaches the LOV. Many LOVs, however, do depend on accomplishment of future maintenance actions. As stated in the WFD rule, any maintenance actions necessary to reach the LOV will be mandated by airworthiness directives through separate rulemaking actions.

In the context of WFD, this approach is necessary to enable DAHs to propose LOVs that allow operators the longest operational lives for their airplanes, and still ensure that WFD will not occur. This approach allows for an implementation strategy that provides flexibility to DAHs in determining the timing of service information development (with FAA approval), while providing operators with certainty regarding the LOV applicable to their airplanes.

During routine maintenance inspections, three operators reported finding cracks in the upper aft skin panel. The cracks were located along the upper row of rivets common to the longeron 28 skin splice, near the flat aft pressure bulkhead. Cracks were detected

on airplanes that had accumulated between 27,072 and 46,176 total flight cycles. This cracking, if not corrected, could result in fatigue cracking of the upper aft skin panel of the fuselage, which could result in loss of structural integrity and consequent rapid decompression of the airplane.

Relevant Service Information

We reviewed Boeing Alert Service Bulletin DC8-53A080, Revision 2, dated September 18, 2013. For information on the procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for Docket No. FAA-2014-0235.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require removing previously installed local repairs; installing a full-length improvement modification with finger doublers, or a full-length repair with finger doublers; and doing repetitive detailed inspections or repetitive low frequency eddy current inspections for cracking along all four edges of the doublers, and corrective action if necessary.

Related Rulemaking

On March 9, 2008, we issued AD 2008-06-23, Amendment 39-15435 (73 FR 14378, March 18, 2008). AD 2008-06-23 provides an option to install full-length preventive modifications or full-length repairs, and requires repetitive inspections. Accomplishing these actions is a method of compliance with the requirements of paragraphs (g) and (h) of this proposed AD.

Differences Between this Proposed AD and the Service Information

Boeing Alert Service Bulletin DC8-53A080, Revision 2, dated September 18, 2013, specifies to contact the manufacturer for instructions on how to repair certain conditions, but this proposed AD would require repairing those conditions in one of the following ways:

- In accordance with a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) whom we have authorized to make those findings.

Explanation of Compliance Time

The compliance time for the modification specified in this proposed AD for addressing WFD was established to ensure that discrepant structure is modified before WFD develops in airplanes. Standard inspection techniques cannot be relied on to detect WFD before it becomes a hazard to flight. We will not grant any extensions of the compliance time to complete any AD-mandated service bulletin related to WFD without extensive new data that would substantiate and clearly warrant such an extension.

Costs of Compliance

We estimate that this proposed AD affects 18 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Full-length modification or repair	Up to 184 work-hours X \$85 per hour = \$15,640	Up to \$14,720	Up to \$30,360	Up to \$546,480
Inspection	9 work-hours X \$85 per hour = \$765 per inspection cycle	\$0	\$765 per inspection cycle	\$13,770 per inspection cycle

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions specified in this proposed AD.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

The Boeing Company: Docket No. FAA-2014-0235; Directorate Identifier 2013-NM-249-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(b) Affected ADs

This AD affects AD 2008-06-23, Amendment 39-15435 (73 FR 14378, March 18, 2008).

(c) Applicability

This AD applies to The Boeing Company airplanes identified in paragraphs (c)(1) through (c)(6) of this AD, certificated in any category, as identified in Boeing Alert Service Bulletin DC8-53A080, Revision 2, dated September 18, 2013.

- (1) The Boeing Company Model DC-8-55 airplanes.
- (2) The Boeing Company Model DC-8F-54 and DC-8F-55 airplanes.
- (3) The Boeing Company Model DC-8-61, DC-8-62, and DC-8-63 airplanes.
- (4) The Boeing Company Model DC-8-61F, DC-8-62F, and DC-8-63F airplanes.
- (5) The Boeing Company Model DC-8-71, DC-8-72, and DC-8-73 airplanes.
- (6) The Boeing Company Model DC-8-71F, DC-8-72F, and DC-8-73F airplanes.

(d) Subject

Air Transport Association (ATA) of America Code 53, Fuselage.

(e) Unsafe Condition

This AD was prompted by multiple reports of cracking of the upper aft skin panel of the fuselage. An evaluation by the design approval holder indicates that the upper aft skin panel of the fuselage is subject to widespread fatigue damage. We are issuing this AD to detect and correct fatigue cracking of the upper aft skin panel of the fuselage, which could result in loss of structural integrity and consequent rapid decompression of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Modification or Repair

Before the accumulation of 45,400 total flight cycles, or within 72 months after the effective date of this AD, whichever occurs later: Remove any previously installed local repairs and install a full-length improvement modification with finger doublers or a full-length repair with finger doublers, as applicable, in accordance with the

Accomplishment Instructions of Boeing Alert Service Bulletin DC8-53A080, Revision 2, dated September 18, 2013. Installation of the full-length improvement modification or full-length repair with finger doublers, in accordance with paragraph (i) of AD 2008-06-23, Amendment 39-15435 (73 FR 14378, March 18, 2008), is a method of compliance with the requirements of paragraph (g) of this AD. Installation of a local repair as specified in paragraph (i) of AD 2008-06-23, does not comply with the requirements of paragraph (g) of this AD.

(h) Post-modification or Post-repair Repetitive Inspections

After accomplishing the actions required by paragraph (g) of this AD, at the applicable time and intervals specified in paragraph (h)(1) or (h)(2) of this AD: Do an external visual inspection or low frequency eddy current (LFEC) inspection for cracking along all four edges of the finger doublers, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin DC8-53A080, Revision 2, dated September 18, 2013. Repeat the inspections thereafter at the applicable time and interval specified in paragraphs (h)(1) or (h)(2) of this AD. Accomplishment of the applicable repetitive inspection specified in paragraph (j)(1) or (j)(2)(ii) of AD 2008-06-23, Amendment 39-15435 (73 FR 14378, March 18, 2008), is a method of compliance with the applicable inspection requirements of paragraph (h) of this AD.

(1) For an external visual inspection, within 30,000 flight cycles after doing the actions specified in paragraph (g) of this AD. Repeat the external visual inspection thereafter at intervals not to exceed 5,000 flight cycles.

(2) For an LFEC inspection, within 15,000 flight cycles after doing the actions specified in paragraph (g) of this AD. Repeat the LFEC inspection thereafter at intervals not to exceed 10,000 flight cycles.

(i) Cracking Repair

If any cracking is found during any inspection required by paragraph (h) of this AD: Before further flight, repair using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

(j) Credit for Previous Actions

This paragraph provides credit for actions required by paragraphs (g) and (h) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin DC8-53A080, dated June 22, 2004; or Boeing Alert Service Bulletin DC8-53A080, Revision 1, dated May 3, 2013. Boeing Alert Service Bulletin DC8-53A080, dated June 22, 2004, was previously incorporated by reference in AD 2008-06-23, Amendment 39-15435 (73 FR 14378, March 18, 2008). Boeing Alert Service Bulletin DC8-53A080, Revision 1, dated May 3, 2013, is not incorporated by reference in this AD.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (l)(1) of this AD. Information may be emailed to: 9-ANM-LAACO-AMOC-REQUESTS@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD if it is approved by the Boeing Commercial Airplanes

Organization Designation Authorization (ODA) that has been authorized by the Manager, Los Angeles ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane and 14 CFR 25.571, Amendment 45, and the approval must specifically refer to this AD.

(I) Related Information

(1) For more information about this AD, contact Chandraduth Ramdoss, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Blvd, Suite 100, Lakewood, CA 90712-4137, phone: 562-627-5239; fax: 562-627-5210; email: chandraduth.ramdoss@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, 3855 Lakewood Boulevard, MC D800-0019, Long Beach, CA 90846-0001; telephone 206-544-5000, extension 2; fax 206-766-5683; Internet <https://www.myboeingfleet.com>. You may view this service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on April 8, 2014.

John P. Piccola,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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